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T.P

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.
09/120,608	07/22/98	PAGE	L IJ-0005

IM52/0510
E I DU PONTE DE NEMOURS AND COMPANY
LEGAL PATENTS
WILMINGTON DE 19898

EXAMINER	
SHOSHO, C	
ART UNIT	PAPER NUMBER
1714	20

DATE MAILED: 05/10/01

Please find below and/or attached an Office communication concerning this application or proceeding.

Commissioner of Patents and Trademarks

Office Action Summary

Application No.	Applicant(s)
09/120,608	Page et al.
Examiner	**Art Unit**
Callie Shosho	1714

-- The MAILING DATE of this communication appears on the cover sheet with the correspond nce address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136 (a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1) ☒ Responsive to communication(s) filed on *Feb 22, 2001*

2a) ☒ This action is **FINAL.** 2b) ☐ This action is non-final.

3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11; 453 O.G. 213.

Disposition of Claims

4) ☒ Claim(s) *6-12* is/are pending in the applica

4a) Of the above, claim(s) _____ is/are withdrawn from considera

5) ☐ Claim(s) _____ is/are allowed.

6) ☒ Claim(s) *6-12* is/are rejected.

7) ☐ Claim(s) _____ is/are objected to.

8) ☐ Claims _____ are subject to restriction and/or election requirem

Application Papers

9) ☐ The specification is objected to by the Examiner.

10) ☐ The drawing(s) filed on _____ is/are objected to by the Examiner.

11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved.

12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. § 119

13) ☐ Acknowledgement is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d).

a) ☐ All b) ☐ Some* c) ☐ None of:

1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____ .
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

*See the attached detailed Office action for a list of the certified copies not received.

14) ☐ Acknowledgement is made of a claim for domestic priority under 35 U.S.C. § 119(e).

Attachment(s)

15) ☐ Notice of References Cited (PTO-892)

16) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)

17) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s). _____

18) ☐ Interview Summary (PTO-413) Paper No(s). _____

19) ☐ Notice of Informal Patent Application (PTO-152)

20) ☐ Other:

DETAILED ACTION

Claim Rejections - 35 USC § 103

1. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

2. Claims 6-12 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ma et al. (EP 0851014) in view of Ma et al. '698 (U.S. 5,085,698).

The rejection is adequately set forth in paragraph 10 in the action mailed 10/18/99, Paper No. 5, and is incorporated here by reference.

Response to arguments

3. Applicants' arguments filed 2/22/01 have been fully considered but they are not persuasive.

Specifically, applicants argue that

(a) the hydrosols of EP 0851014 ("EP") are insoluble in the ink whereas the graft copolymer of the present invention are soluble in the ink.

(b) EP discloses an inversion step which makes the polymers insoluble in the ink.

(c) The polymers of the present invention are in a dissolved state while the hydrosols of EP are in a particulate state.

(d) Applicants argue that page 5, lines 13-16 of EP disclose that hydrophilic hydrosols tend to swell in the ink medium thus producing larger particles and that since smaller particles are generally preferred for ink jet inks, one of ordinary skill in the art would be inclined to select the most hydrophobic hydrosol possible while the present invention requires polymers soluble in the ink.

With respect to argument (a), it is noted that the present claims do not specify any degree of solubility and thus the scope of the present claims encompasses binders of varying degrees of solubility in the aqueous medium. Given that the hydrosols of EP contain some amount of functional groups, i.e. hydrophilic monomers, it is the examiner's position that these hydrosols do have some degree of solubility in the aqueous medium and that this solubility can be and is fine tuned by the kind and amount of functional groups present. Controlling solubility is recognized in the present specification, page 6, lines 32-34, which discloses that by adjusting the hydrophilic/hydrophobic balance of the polymer, the solubility of the polymer in aqueous vehicle can be tailored. Additionally, page 4, lines 26-29 of EP disclose that a balance must be struck between on the one hand, having too few functional groups that would fail to prevent the hydrosol polymer from self-stabilization and, on the other hand, having too many functional groups that would cause the polymer to dissolve in the aqueous medium.

Further, the present claims require that the binder is water-insoluble on one hand while being soluble in an aqueous medium on the other hand. In light of EP's disclosure on page 4, line

11, it is clear that the hydrosol polymer clearly meets the requirement of water-insolubility. With respect to the requirement of solubility in an aqueous medium, as discussed above, a fair reading of EP as a whole shows that EP teaches the use of water-soluble functional groups in the hydrosol polymer in order to control its degree of solubility in an aqueous medium.

With respect to argument (b), it is agreed that the examples of EP disclose that the hydrosols undergo inversion. For instance, in example 1, the hydrosol is dispersed in an aqueous solution of potassium hydroxide under vigorous agitation. However, it is not understood, why this would make the hydrosols of EP insoluble given that ionizing the functional groups of the hydrosol would appear to make the hydrosol more soluble in the aqueous medium.

With respect to argument (c), it is noted that the present claims require that the binders are soluble in the aqueous medium, but substantially insoluble in water. Given that the aqueous medium comprises mostly water, it is clear that the binder of the present invention is not completely soluble in the aqueous medium. Similarly, the hydrosol of EP due to the presence of functional groups is itself partly soluble in the aqueous medium.

With respect to argument (d), while it is agreed that smaller particles are preferred in ink jet inks and thus one of ordinary skill in the art would choose more hydrophobic particles in EP, as stated above, given the presence of functional groups in the hydrosols of EP, it is apparent that

the hydrosols have some degree of solubility in the aqueous medium. As stated on page 4, lines 26-29 of EP, if the hydrosol contains too many functional groups, it will become completely soluble in the aqueous medium which clearly infers (i) the presence of the functional groups do impart a degree of solubility to the hydrosol and (ii) the degree of solubility can be controlled. Further, while the hydrosols of EP may have only partial solubility in the aqueous medium, the present claims do not require any particular degree of solubility.

4. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

5. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Callie Shosho whose telephone number is (703) 305-0208. The examiner

can normally be reached on Monday-Thursday from 7:00 am to 4:30 pm. The examiner can also be reached on alternate Fridays.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Vasu Jagannathan, can be reached on (703) 306-2777. The fax phone number for the organization where this application or proceeding is assigned is (703) 305-3599.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0661.

Callie Shosho
5/8/01

VASU JAGANNATHAN
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 1700